

[49, A-73]

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SARDAR PATEL UNIVERSITY

M.Sc., II SEMESTER BIOTECHNOLOGY EXAMINATION

BIOCHEMISTRY-PS02EBIT03

28th, Tuesday, 2015- 02:30 P.M. to 05:30 P.M.

Max. Marks 70

1. Choose the correct answer

1x8=8

- (i) In maltose, one monosaccharide is glucose and other one is-
(a) Glucose (b) Fructose (c) Galactose (d) Mannose
- (ii) After vigorous exercise, lactate generated in skeletal muscle is-
(a) Converted to glucose by glycerol-3-phosphate
(b) Transported to the liver, which is converted to glucose by gluconeogenesis
(c) Converted back to glucose via gluconeogenesis in the skeletal muscle
(d) None of these
- (iii) Sucrose is a non-reducing sugar because it has-
(a) Free aldehyde and ketone groups
(b) No free aldehyde and ketone groups
(c) No free aldehyde groups
(d) No free ketone groups
- (iv) The arrangement order of the cytochromes in the electron transfer chain is
(a) $\text{Cyt } b \rightarrow c_1 \rightarrow c \rightarrow aa_3 \rightarrow O_2$
(b) $\text{Cyt } b \rightarrow c \rightarrow c_1 \rightarrow aa_3 \rightarrow O_2$
(c) $\text{Cyt } b \rightarrow c_1 \rightarrow aa_3 \rightarrow c \rightarrow O_2$
(d) $\text{Cyt } c_1 \rightarrow c \rightarrow b \rightarrow aa_3 \rightarrow O_2$
- (v) The electrically neutral charged molecule are known as-
(a) Anion and cation (c) Amphipathic ions
(b) Zwitter ions (d) None of the above
- (vi) Micelles of fatty acids in water are organized such that theface the solvent and the.....are directed toward the interior-
(a) Hydrophilic heads, hydrophobic tails
(b) Carboxylic acid groups, hydrocarbon chains
(c) Hydrophobic tails, hydrophilic chains
(d) Both A and B are correct
- (vii) Which of the following is considered both ketogenic and glucogenic?
(a) Valine (b) Phenyl alanine (c) Lysine (d) Tryptophan
- (viii) The method of protein estimation that is dependent on intact peptide bond is-
(a) Million's test (b) Barfoed's test (c) Glyoxylate test (d) Biuret test

(2) Attempt any seven

(2 X 7 = 14)

- (a) What is Proton motive force?
- (b) Write in brief about Cori cycle.
- (c) Differentiate between Starch and Glycogen.
- (d) What are Ketone bodies?
- (e) What is the difference between Free energy and Standard Free Energy?
- (f) How does Acetyl-CoA come to cytoplasm for fatty acid biosynthesis?
- (g) Differentiate between glucogenic and ketogenic amino acids.
- (h) What is Anfinsen's protein folding experiment?
- (i) Differentiate between essential and non essential amino acids and give examples.

(3) a. Write in details about fate of pyruvate. (06)

b. Describe in detail about TCA cycle and explain its amphibolic nature (06)

OR

b. Define gluconeogenesis. Describe the different bypasses involved in it. (06)

(4) a. Explain the mitochondrial Electron Transport Chain in details. (06)

b. Write a note on ATP Synthase complex. (06)

OR

b. Explain Iron-Sulphur proteins and Cytochromes (06)

(5) a. Write the reactions for conversion of Palmitoyl-Co A to Acetyl CoA. (06)

b. Explain in details the β -oxidation of fatty acids. (06)

OR

b. Give detailed account of Cholesterol biosynthesis. (06)

(6) a. Explain "Inborn error of metabolism" with examples. (06)

b. Write a note on regulation of Purine Biosynthesis. (06)

OR

b. Write a note on regulation of Purine Biosynthesis. (06)

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